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ABSTRACT

Scholars of communication have theorized extensively on the concept of process, but there is a general absence of practical research on the topic. Part of the difficulty in narrowing the gap between theory and research in this area may lie in the use of the term, "the idea of process," in reference to several different, ununified phenomena. These phenomena--change over time, interrelatedness, complexity, interaction, emergence, and others--require a systematic research approach which builds on D. K. Berlo's book "The Process of Communication." The concept of change over time is the most important of these effects. In this area research could follow the theorizing which sets out the essential relativity of events as viewed in a time continuum. Perhaps the most fruitful direction for practical research in "process communication" is the application of systems concepts. (CH)

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# DISSECTING THE 'IDEA OF PROCESS': SOME IMPLICATIONS FOR THEORY AND RESEARCH ON COMMUNICATION

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In the past dozen years there has developed a growing set of arguments, coupled with calls to scholars, to study human communication as a form of "process" (Berlo, 1960, pp. 23-28; Chronkite, 1969, pp. 131-133; Kibler and Barker, 1969, p. 35; Krippendorff, 1970, pp.258-267; Scheidel, 1971; among others). More recently, there have also been an increasing number of comments which call attention to the gap between the general presence of the "idea of process" in conceptualizations of human communication and the general absence of the concept in research (Arundale, 1971, pp. 55-71; Brooks and Scheidel, 1968, p.1; Scheidel, 1971 and 1972, p. 469; cf. Smith, 1972, p. 174; and others). This paper will not extend either set of comments, but will assume that the arguments have been well founded. The concern, here, instead, will be both to examine one factor which may have contributed to the "theory-research gap," and on that basis to consider an approach to narrowing or closing that gap.

More specifically, the gap which has been recognized between the frequent conceptualizations of communication events as a process, and the infrequent "operationalization" of the concept of process in the related research, appears to stem in part from the use of the "idea of process (Smith, 1972)" to refer to several relatively distinct attributes of events. That is, the term "process" has been used in both past and current discussions of human communcation to encompass such key attributes of phenomena as change over time, complexity, and interaction, among others (Berlo, 1960, pp. 23-28; G.R. Miller, 1966, pp. 31-33; Smith, 1972). This broad and inclusive usage of the idea of process appears to have hindered the development of "process-oriented" research, in that the lack of a careful differentiation of these various attributes of events makes it difficult to formulate research approaches which tap those attributes. This paper will attempt to "dissect" the idea of process with the aim of not only identifying key attributes of events which must be considered, but also outlining some directions for the task of "getting on with" research on human communication which incorporates the concept of process.

Three brief points need to be mentioned at the outset. First, the "dissection" described below is one of several which could be performed. Accordingly, no claim is made for either exclusiveness or exhaustiveness of the results, nor is there any implied attempt to "legislate" usage. The dissection which is outlined does appear to be valid and useful, however, given the implications it generates for research (and even for theory). Second, the concern here will be with

the use of the term "process" as a noun (rather than as an adjective or verb) and more specifically with those uses of the term found in considerations of human communication (recognizing that the term is used in many other contects,as well). Third, it should be noted that the past (and current) tendency toward a broad and generally undifferentiated usage of the idea of process is but one factor which has contributed to the general absense of communication research which operationalizes the concept of process. Others can be identified (Arundale, 1971, pp. 71-74). It appears useful to focus on this one factor, however, because of the directions it suggests toward narrowing the theory-research gap.

Dissecting the "Idea of Process". Perhaps the best known discussion of the idea of process as it relates to the study of communication is that by Berlo in his book The Process of Communication (1960, pp. 23-28). This discussion, with its rather broad usage of "process" will serve as the basis for the examination or dissection below, both because it has served as a basis for several subsequent discussions of the concept (e.g., G.R. Miller, 1966, pp. 31-33), and because th Berlo discussion is often considered as "... outstanding fo. its clarity and brevity (Smith, 1972, p. 175)." [1] The suggestion here is that although Berlo's consideration of process was probably clear and concise for its day, it is no longer so given the needs of research on human communication in the 1970's.

Berlo begins his rather broad ranging discussion of the idea of process by noting that "... Heraclitus pointed out the importance of the concept of process when he stated that a man can never step in the same river twice; the man is different and so is the river. Thomas Wolfe's novel of the 1940's, You Can't Go Home Again, makes the same point (p. 23)." A more careful examination or dissection of this comment, however, using the more refined tools available today, suggests that there are two points involved here, not just one. First, the two examples indicate that one attribute of events termed "process" is their change over time (Arundale, 1971; cf. Scheidel, 1971). Secondly, however, the examples also point to the directionality of such change in time, or more specifically to the attribute of irreversibility in events (cf. Grunbaum, 1962, pp. 149-161; J.G. Miller, 1965, p. 209).

[1]There are, of course other ways to approach an examination or dissection of the idea of process (Arundale, 1971, pp. 81-98), including the "historical" approach recently identified by Scheidel (1972, p. 467). The approach taken here has been chosen not only because of the broad influence of the Berlo discussion, but also because of the need to make a more "... careful distinction between 'everyday speech' and the language of scientific explanation (from A.F. Bentley in Scheidel, 1972, p. 466)."

The attribute of change over time is also evident as Berlo continues: "If we accept the concept of process, we view events and relationships as dynamic, on-going, ever-changing, continuous. When we label something as a process, we also mean that it does not have a beginning, and an end, a fixed sequence of events. It is not static, at rest. It is moving (p. 24)." Note, however, that the term "continuous" and the phrase "... it does not have a beginning, an end, " point beyond the concept of change over time to an attribute of continuity in events. That is, events termed "processes" can be viewed as having antecedents which stretch back indefinitely in time, and effects which stretch forward indefinitely (Arundale, 1971, pp. 28-29).

Berlo closes the same paragraph by noting also that: "The ingredients within a process interact; each affects all the others (p. 24)," an idea which he returns to later (in conjunction with the idea of continuity) in the following paragraph:

> Communication theory reflects a process point of view. A communication theorist rejects the possibility that nature consists of events or ingredients that are separable from all other events. He argues that you cannot talk about the beginning or the end of communication or say that a particular idea came from one specific source, that comunication occurs in only one way, and so on (p. 24).

In both cases, Berlo appears to be introducing the broad attribute of interrelatedness among the parts of events--an attribute which he refines in several ways (cf. Scheidel, 1971). For example, he notes that the attribute of relativity of events is a central one in the twentieth century "process view of reality," and conceives of "relativity" as suggesting "... that any given object or event could only be analyzed or described in light of other events that were related to it, other operations involved in observing it (1960, p. 24; cf. Lenzin, 1954, pp. 70-80)."

As a result of his orientation toward "process," the communication theorist, in Berlo's view, also

> ...recognizes that certain things may precede others, but that in many cases the order of precedence will vary from situation to situation. This is not to say that we can place no order on events. The dynamic of process has limitations: nevertheless, there is more than one dynamic that can be developed for nearly any combination of events (p. 25).

In this case, Berlo appears to suggest that for events termed "processes" it may be difficult or impossible to determine a single order or sequence--a characteristic which it may be useful to identify as the attribute of equifiniality or "multicausality" of events (Bertalanffy, 1965, p. 233; cf. Lenzin, 1954, pp. 16-26).

Further on in his discussion of the idea of process, Berlo returns to the broad attribute of interrelatedness by noting that: "Objects which we separate may not always be separable, and they never operate independently--each affects and interacts with the others (p. 26)." Here, the emphasis on "non-separability" would appear to indicate that interaction, in its statistical sense, is another attribute of events labeled "processes" (cf. Williams, 1968, pp. 102-111). Yet another aspect of interrelatedness seems to be inherent in the later comment that: "As any good cook knows, it is the mixing process, the blending, that makes a good cake; ingredients are necessary, but not sufficient (p. 26)." That is, a cake has properties which result from the particular "blending" or organization of its constitutients--an attribute of events which has been frequently termed emergence (Bertalanffy, 1968, p. 55; Buckley, 1967, p. 42; J.G. Miller, 1965, p. 201n, 217).

Finally, as Berlo draws his discussion of the idea of process to a close he notes that:

> Much of the scientific research in communication attempts to isolate factors which do or do not make a difference in the development of the process. Obviously, all the ingredients have not been determined--in fact, there is considerable basis for doubt as to whether they ever will be determined (p. 27).

Here, the second sentence in particular points to the multiplicity of "ingredients" or "factors" in communication when it is viewed as a form of process. But once again, rather than refer to this attribute by the term "process," it may be more useful to identify it as the attribute of complexity of events (cf. Popper, 1969, pp. 51-52; Scheidel, 1971).

Berlo's discussion of the idea of process can thus be seen to encompass or "lump together" a number of relatively distinct attributes of events. A more careful examination or dissection like that above may be useful, then, if only to alert one to the potentially broad or encompassing usage of the term as it is frequently applied in discussions of

human communication. Again, it should be clear that dissection of the idea of process can be performed in other manners with slightly different, though fully compatable, results (Arundale, 1971, pp. 82-98). Similarly, it is no doubt possible to carry out the dissection above at either a finer or grosser level, depending on the "sharpness" of one's tools. The manner and level chosen here appear useful, however, given the purpose of seeking implications for research.

It is worth noting that one possible objection to a dissection such as the above is that it isolates attributes which are best viewed as a whole (as in certain criticisms of the anatomist). Indeed, the terms distinguished above are related in many ways, and it is certainly entirely appropriate to use the concept of process to refer to the whole: perhaps "process" even serves to indicate some emergent properties of this complex of attributes. However, if one is faced with the need to do research on an event (especially a communication event) which is conceptualized as a process, the broad, encompassing usage of the term offers little direction. In fact, as indicated earlier, the absence of a more carefully differentiated idea of process may be one factor (among others) which has hampered formulation of research approaches which operationalize the idea of process. As is the case in medicine, then, a dissection such as that above should provide information and hold implications for research (and perhaps practice).

Implications. The dissection of Berlo's discussion produced a moderately long list of attributes of events which are labeled as "processes," specifically:

Change over time
Irreversibility
Continuity
Interrelatedness
Relativity
Equifinality (or Multicausality)
Interaction
Emergence
Complexity

Even a casual inspection of this list should make one point apparent: All of these attributes are intimately tied to systems conceptions of phenomena (e.g., Bertalanffy, 1968; Buckley, 1968; J. G. Miller, 1965). Indeed, the concept of process itself is a basic system concept, although it is used more narrowly in this context to refer to "change over time" (J. G. Miller, 1965, pp. 209-211; cf. Gerard, 1968, pp. 54-57).[2]

[2]There are several reasons why this narrower usage is appropriate, one of the more important being the commonality of the

This close similarity between the attributes of events emcompassed in the broader usage of the idea of process and certain key systems concepts suggests that the study of human communication events as processes would gain much by drawing on or adopting a "systems point of view." Broad ranging justifications for such a step have of course already been developed by Krippendorff (1971) and Monge (1972a,b), making the similarity noted here primarily a suggestive one. In practice, systems conceptions have already had a definite impact on the study of communication, for it is certainly the case that the rapid growth of systems paradigms since Berlo's 1960 discussion of "process" has clarified and in some cases (emergence and equifinality) provided the tools used above in dissecting that discussion.

The primary implication of this dissection of the idea of process is that in order to incorporate the concept of process in research on human communication, one must operationalize those key attributes of events encompassed by the concept. That is, because of the broad scope of "process" as the term is frequently used, it is impossible to operationalize it directly. Formulating and conducting research which will close the "theory-research gap" therefore requires investigators to find ways of assurring that their research taps attributes of communication events such as change over time, interrelatedness, complexity, etc.

Careful study of the nine attributes identified earlier shows that some are considerably more important to the conduct of research aimed at tapping "process" than are others. In other words, while the attributes of irreversibility, continuity, and equifinality are all aspects of the broader usage of "process," they point to characteristics of events which are probably more important in interpreting the results of research than in constructing a research design or in analyzing data. The remaining attributes, however, bear directly on the conduct of research and analysis, i.e., change over time, interrelatedness (with its assoicated concepts of relativity, interaction, and emergence), and complexity. Scheidel, working from a somewhat different perspective, has arrived at a fairly similar breakdown of attributes to be considered in "...research following the process model (1971, pp. 2,9)." Hence, it would appear that these attributes are the ones which can provide the clearest directions for research which

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attribute of "change over time" in many of our ordinary uses of the term (see Arundale, 1971, pp. 31, 82-127). It is evident, however, that most uses of "process" in discussions of <u>human</u> communication are in the broader (and also appropriate) sense identified earlier.

seeks to study human communication events as processes.

Of these key attributes, that of change over time can be singled out as most in need of attention in research. That is, although operationalization of the attribute in research can provide much valuable information about human communication (Arundale, 1971, pp. 41-56, Chs. 5, 6), it has found only a small place in the bulk of communication research to date (Arundale, 1971, pp. 55-74; Scheidel, 1971, p. 9). Recent work has shown that the requirements (necessary and sufficient conditions) for an adequate operationalization of "change over time" are rather stringent (Arundale, 1971, Ch. 4), but operationalization is by no means unattainable. Evidence of this can be found both in the work of a number of investigators such as Brooks and Scheidel (1968), Brown and Bellugi (1964), Harrison (1969), Hawes (1971), Insko (1964), Jaffee and Feldstein (1970), and others (as is Arundale, 1971, pp. 62-29, Ch. 5), and in the availability of a large body of information of value in dealing with change over time in communication research (Arundale, 1972).

As in research, this same attribute of change over time also lacks an integral place in conceptualizations of human communication. In other words, to be useful in their functions of organizing and guiding research, theories must also incorporate the attribute--something they have not generally done. As with research, too, exceptions can be found, and a number of conceptual tools are available (Arundale, 1971, pp. 127-138). Nevertheless, the overall pattern is clear: As far as the attribute of change over time is concerned, both research and theory on human communication have tended to fall short of an operationalization of the concept of process.

To some degree, research and theory have also fallen short of the idea of process regarding the other key attributes as well. The broader attribute of interrelatedness is clearly present in theory and research whenever one attempts to conceptualize and verify the effects which one set of communication variables has on another set. The closely associated attribute of relativity has also been considered in research (though perhaps not in theory) in the past, and is at the heart of the growing concern with the "social psychology of the psychological experiment" (Jung, 1971; Rosenthal, 1966). The attribute of interaction is likewise an important aspect of interrelatedness and has quite clearly been operationalized both in research and to some degree in theory (Scheidel, 1971, p. 9; Williams, 1968, pp. 102-111). Quite the opposite is true for the related attribute of emergence, however, for while the concept has been occasionally discussed (Bertalanffy, 1968, p. 55), there is still considerable controversy about its viability as a concept (Meehl and Sears, 1956) and little if any consideration

of its operationalization (J. G. Miller, 1965, p. 201n).

Last, but not least due to its importance, is the key attribute of complexity in events which are labeled "processes." Human communication events in particular have been readily acknowledged as complex, and it is clear that while theoretical structures may lag somewhat behind in incorporating the attribute of complexity (cf. Monge, 1972b, p. 12), research and analysis techniques for dealing with multiple variables abound (Cattell, 1966; Kelly, 1969; cf. Scheidel, 1971, p. 9).

This brief review of the key attributes of the idea of process suggests, then, that while complexity and interrelatedness have been incorporated to a moderate degree in theory and research, the attribute of change over time falls well short of this level and needs much attention. With this in mind, it is useful to return to the primary implication noted earlier, i.e., "in order to incorporate the concept of process in research on human communication, one must operationalize those key attributes of events encompassed by the concept." The directions needed in research should be clear. Investigators will have to formulate research (and to some extent theoretical) approaches which tap not only the "more accessible" attributes of complexity and interrelatedness, but also the "less accessible" attribute of change over time. Should they succeed in doing so, the earlier dissection of the idea of process would indicate that their research operationalizes "process." As such, it should serve to bring research on human communication closer to its conceptualizations.

Three closing notes. First, the approach to the "idea of process" embodied in this paper should serve to make more evident the place and importance of systems conceptions in the study of human communication, and especially in the study of the process of human communication. Clearly, the various attributes of processes dissected earlier are all integral concepts in systems approaches. But perhaps less clear is the fact that many of the more powerful tools for dealing with attributes of events such as change over time, interrelatedness, and complexity also stem from the study of systems. The going is not easy, but an investigator concerned with research (and theory) on communication events as processes can gain much from the work of Bertalanffy (1968), DeGreene (1970), Klir (1969, 1972), Koenig (1967), Milsum (1966), and others (as in Arundale, 1972).

Second, Scheidel has recently suggested that one current interest of researchers concerned with the concept of process is to move in the direction of a "thoroughly inductive" analysis (1972, p. 468; cf. Smith, 1972, pp. 179-182). If this is an accurate statement, might it be explained by a

desire to gain "immediate operationalization" of some of the key attributes of the idea of process? A thoroughly inductive approach to human communication events as processes does offer some possibilities for tapping such attributes. But it also offers the opportunity to inadvertantly ignore some of them as well. Given that tools are available for dealing with all of the key attributes of "process," might not the interest in being inductive become in part a means of avoiding some very hard work?

Third, Scheidel is quick to note that "...the desire to describe a process is a constantly expanding goal. It is difficult, perhaps impossible, to fulfill (1972, p. 468)." Indeed, the dissection carried out in this paper, together with the subsequent implications for research have definitely expanded the goal of describing a process. And it <u>is</u> a complex and difficult task (Arundale, 1971, pp. 220-227; 1972, p. 14). But as this paper suggests, it is perhaps <u>not</u> impossible--and the returns for the effort in terms of knowledge about the nature of human communication will be high indeed (Arundale, 1971, pp. 41-74, 226-227; Kibler and Barker, 1969, p. 35; Scheidel, 1971, pp. 8-12).

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